

### **REMARKS**

Applicant thanks the Office for examining this application. Claims 1-26 are pending. Claims 2-21 and 23-26 have been amended. No claims have been canceled, added, or withdrawn.

Withdrawal of the outstanding objections and rejections is respectfully requested in view of the following remarks.

#### **Allowable Subject Matter**

Applicant thanks the Office for indicating that **claims 15-17** would be allowable if rewritten an independent form including all of the limitations of the base claim and any intervening claims and other rejections under 35 USC §101 and §112, first and second paragraphs, were overcome.

#### **Claim Amendments**

Applicant respectfully submits that the amendments to claims 2-21 and 23-26 do not present any new features that the Office has not already had the opportunity to examine. For instance, with respect to dependent **claims 2-6, 9-17, 19-21, and 23-26**, the preambles of these dependent claims have been amended to more clearly show antecedent basis on to their respective base claim. For example, referring to claim 2, "A method as recited in claim 1" has been amended as "The method of claim 1", etc. In another example, the preamble of claim numeral line has been amended

to change "[a] computer-readable medium as recited in claim [...]" to "[t]he computer-readable medium of claim [...]," etc.

### **Objections to the Specification**

The Action objects to the specification indicating that antecedent basis is needed for features of claim 8 and 18. Claims 8 and 18 have been amended, as described below. In view of these claim amendments withdrawal of the objection to the specification is requested.

### **35 USC §101 Rejections**

Claims 7-17 are rejected under 35 USC §101 as being directed to non-statutory subject matter. **Independent claims 7 and 8** have been amended to more particularly indicate that the computer-readable medium stores the computer-program instructions. Thus, independent claims 7 and 8 represent statutory subject matter within the meaning of 35 USC §101. **Claims 9-17** depend from claim 8 and are also directed to statutory subject matter based on their respective dependencies. Withdrawal of the 35 USC §101 rejection of claims 7-17 is requested.

### **35 USC §112, First Paragraph, Rejections**

Claims 8-21 stand rejected under 35 USC §112, first paragraph, as failing to comply with the enablement requirement.

**Claims 8 and 18** have been amended to indicate that "quantizing the preprocessed image to generate quantized image perception units such that color in texture areas across the quantized image perception units are

coarser and ~~normalized~~ as compared to the image” (emphasis added). Exemplary techniques for “quantizing the preprocessed image to generate quantized image perception units” (emphasis added) is described and enabled, for example, in the section titled “Preprocessing to Resize, Transform, Quantize, and Divide Images.” As described in paragraph [0038], “the color quantization operation makes color coarser in texture areas.” Thus, the claimed feature of “quantizing [...] **such that** color in texture areas across the quantized image perception units are coarser as compared to the image” is enabled in the specification.

Withdrawal of the 35 USC §112, first paragraph, rejection of independent claims 8 and 18, and claims 9-17 and 19-21 depending from respective ones of claims 8 and 18, is requested.

### **35 USC §112, Second Paragraph, Rejections**

Claims 8-21 stand rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. Independent **claims 8 and 18** have been amended to indicate that “quantizing the preprocessed image to generate quantized image perception units such that color in texture areas across the quantized image perception units are coarser and ~~normalized~~ as compared to the image” (emphasis added).

Withdrawal of the 35 USC §112, second paragraph, rejection of independent claims 8 and 18, and claims 9-17 and 19-21 depending from respective ones of claims 8 and 18, is requested.

In addressing **claim 14**, the Action asserts that Applicant needs to include an explicit definition of the term "fuzzy growing" to make the claim clear. However, the MPEP §2173.05(a) states that "[a]lthough it is difficult to compare the claimed invention with the prior art when new terms are used that do not appear in the prior art, this does not make the new terms indefinite. New terms are often used when a new technology is in its infancy or is rapidly evolving. The requirements for clarity and precision must be balanced with the limitations of the language and the science. If the claims, read in light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, **the statute (35 U.S.C. 112, second paragraph) demands no more.**" (Emphasis added). Thus, a term is only indefinite if one skilled in the relevant art would not understand what is claimed even when the claim is read in the light of the specification. Here, the specification clearly describes the claimed feature of "fuzzy growing", for example, please see paragraphs [0048] through [0050]. In view of this explicit disclosure, Applicant respectfully submits that those skilled in the art would understand what is claimed when the claim is read in light of the specification. Accordingly, Applicant respectfully submits that use of the term "fuzzy growing" in claim 14 does not make claim 14 indefinite.

Withdrawal of the 35 USC §112, second paragraph, rejection of claim 14 is requested.

### **35 USC §103 Rejections**

Claims 1 and 3-6 stand rejected under 35 USC §103(a) as being unpatentable over US patent serial number 6,670,963 (“Osberger”) and further in view of “Peer Group Filtering and Perceptual Color Image Quantization” (1999). (“Deng”). However, the M.P.E.P. states that, to support the rejection of a claim under 35 U.S.C. § 103(a), each feature of each rejected claim must be taught or suggested by the applied references, and that each of the words describing the feature must be taken into account.

To establish *prima facie* obviousness of a claimed invention, **all** the claim limitations **must** be taught or suggested by the prior art. ... **All** words in a claim **must** be considered in judging the patentability of that claim against the prior art.

(M.P.E.P. § 2143.03, emphasis added). Independent claims 1, 12, 21 and 29 are base claims of particular ones of dependent claims 4, 10, 19, 28 and 35. Each of the **independent claims 1, 7, 8, 18 and 22** include at least one feature not taught or fairly suggested by *Osberger*, alone or in combination, with *Deng* and is therefore patentable for at least this reason.

For example, claim 1 recites “preprocessing an image to generate a quantized set of image blocks”. The Action admits that *Osberger* does not disclose these claimed features. Thus *Osberger* cannot teach the further claimed features of “generating a contrast-based saliency map for modeling one-to-three levels of image attention **from the quantized image blocks**” (emphasis added). The Action combines *Osberger* with the teaching of *Deng*, section 5, first paragraph, attempting to arrive at these conceded

missing features. However, *Deng* does not teach, or fairly suggest, "generat[ing] a quantized set of image blocks," as claim 1 requires.

For instance, *Deng*, in the last paragraph in section 3 explicitly discloses "[t]he final quantized image is obtained by assigning each pixel with its closest cluster centroid." Thus, *Deng* explicitly teaches a process that results in an entire quantized image, not "a quantized set of image blocks," as claim 1 requires. Although *Deng* mentions that the results of color quantization (i.e., a quantized image" can be used in image segmentation applications, Applicant respectfully submits that image segmentation applications are typically directed to locating objects and boundary lines (e.g., to distinguish objects from background). Clearly, this does not disclose the above recited features that result in "a quantized set of image blocks" from "preprocessing an image."

In view of the above, the features of claim 1 are not obvious over the cited combination of references. Dependent **claims 3-6** are also not obvious over the cited combination of references at least by virtue of their respective dependency on allowable claim 1. Moreover, independent claims 3-6 include further features that are not obvious over the cited combination of references.

For instance, **claim 3** recites:

- dividing the image subsequent to quantization into multiple perception units; and
- calculating a respective contrast of color components for each perception unit; and
- normalizing calculated contrasts to smooth the contrasts

In addressing these claimed features, the Action asserts that *Osberger* at column 3, lines 9-11, teaches "calculating a respective contrast of color components for each perception unit." Applicant disagrees. The cited portion of *Osberger* (lines 8-11) explicitly describes that "**a current frame of video [...] is first segmented** by a segmentation algorithm 30 into homogenous regions using both luminance color information" (emphasis added). Clearly, this explicit description is completely silent on any teaching, or fair suggestion, that a quantized image is divided into multiple perception units. For this additional reason, claim 3 is not obvious over the cited combination of references.

In another example, and addressing **claim 4**, the Action asserts that since regions of interest in a digital picture are a collection of pixels, that the features of claim 4 obvious over the teachings of *Osberger*. Applicant disagrees. **Claim 4** recites "extracting attended points from the contrast-based saliency map." Thus, the features of claim 4 are more than just indicating that a region of interest in a digital picture is a collection of pixels in an importance map. Claim 4 requires extraction of the attended points ("extracting attended points"). For this additional reason, claim 4 is not obvious over the cited combination of references.

With respect to **claims 5 and 6**, the Action relies on the same portions of *Osberger* used to reject claim 4 to reject "extracting an attended area" and "extracting an attended view from the contrast-based saliency map." These claimed features pertain to more than an indication that a region of interest in a digital picture is a collection of pixels in an importance map. Nor does *Osberger* teach, or fairly suggest, these claimed

features of "extracting an attended area" and "extracting an attended view from the contrast-based saliency map" (emphasis added). For these additional reasons, claims 5 and 6 are not obvious over the cited combination of references

Withdrawal of the 35 USC §103(a) rejection of claims 1 and 3-6 is requested.

Claims 2, 7 8-10, 13, and 18-26 stand rejected under 35 USC §103(a) as being unpatentable over *Osberger* in view of *Deng* and further in view of US patent serial number 6,934,415 ("*Stentiford*"). *Stentiford* is combined with *Osberger* and *Deng* for the teachings of "resizing the image such that an aspect ratio of the images maintained", and "a computer readable medium." Assuming *arguendo* that *Stentiford* provides such teachings, these teachings in and of themselves do not cure the already described deficiencies of *Osberger* and *Deng* with respect to claim 1. **Claim 7, 8, 18 and 22** include salient features that are similar to the features of claim 1, and are allowable over *Osberger* and *Deng* for the same or similar reasons. Since the asserted additional teachings of *Stentiford* do not cure the deficiencies of *Osberger* and *Deng*, claims 1, 7, 8, 18 and 22 are also allowable over the cited combination or references. **Dependent claims 2, 9-10, 13, 19-21, and 23-26** depend from one of these allowable base claims and are therefore also patentably distinguished over the cited combination of references at least because of their respective dependencies.

Accordingly, withdrawal of the 35 USC §103(a) rejection of claims 2, 7, 8-10, 13, and 18-26 is requested.



Claims 8-14 stand rejected under 35 USC §103(a) as being unpatentable over US patent serial number 5,901,245 (“Warnick”) in view of Deng and further in view of “Stentiford”. In addressing **claim 8**, the Action asserts that the claimed “contrast-based saliency map,” which is used for “modeling image attention”, is taught by *Warnick’s* description at column 3, lines 1-6, and column 4, lines 19 through 20. Applicant disagrees.

*Warnick* describes a system “for detecting open-space in a digital image” (Abstract). To this end, *Warnick* describes the creation of an activity map. “This activity map 302 identifies the spatial distribution of activity, or homogeneity, in the digital image”, (column 3, lines 55-59). *Warnick* explicitly teaches that the activity map is generated “by measuring the activity/smoothness/homogeneity within the digital image 300 using any known method, such as **edge detection, local entropy measurement, or local texture analysis**” (column 3, lines 59-64, emphasis added). Please note that this explicit description of *Warnick* is completely silent with respect to any teaching, or fair suggestion, that the activity map is **generated based on contrast saliency**. At most, *Warnick* teaches that these methods to generate an activity map will result in “open-space regions, which are relatively texturally smooth and of relatively low local contrast” (column 4, lines 18-23). Indicating that open-space will have low local contrast clearly does not teach, or fairly suggest, “generating a **contrast-based** saliency map” (emphasis added). And certainly this explicit description of *Warnick* does not teach “generating a contrast-based

saliency map from the quantized image blocks”, wherein “the contrast-based to saliency map [comprises] contrast of color components **for each perception unit**” (emphasis added), as claim 8 requires.

*Deng* is combined with *Warnick* for the teachings of color space conversions, and quantizing a digital image to generate quantized image perception units. However, for the reasons already discussed above, *Deng*’s quantization operations merely result in a complete, single, whole quantized image. *Deng*’s disclosure that the quantized image can be used in image segmentation applications plainly does not teach, or fairly suggest, generating “quantized image perception units” from the quantized image. Thus, combining *Warnick* with *Deng* does not cure the already described efficiencies of the primary reference.

*Stentiford* is combined with *Warnick* with *Deng* for the teachings of “resizing the image such that an aspect ratio of the images maintained.” Assuming arguendo that *Stentiford* provides such a teaching, this teaching in and of itself does not cure the already described efficiencies of *Warnick* and *Deng* with respect to claim 8. Thus, claim 8 is patentably distinguished from the cited combination of references. **Dependent claims 9-14** depend from claim 8 and are therefore also patentably distinguished over the cited combination of references at least because of their respective dependency on allowable base claim 8.

Accordingly, withdrawal of the 35 USC §103(a) rejection of claims 8-14 is requested.

## **Conclusion**

Pending claims 1-26 are in condition for allowance and action to that end is respectfully requested. Should any issue remain that prevents allowance of the application, the Office is encouraged to contact the undersigned to discuss this case prior to issuing any subsequent Action.

Respectfully Submitted,

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